ABSTRACT: *The following is a proposed suggested amendment for the abstract.*

The invention relates to a method and device for modifying the probability of deexcitation in relation to ~~nuclear isomers~~ isomer nuclides, consisting in exciting samples containing nuclides having a metastable state with a half-life varying between one microsecond and 50 years. The excitation is achieved by irradiation with entangled gamma rays produced ~~means of~~ either by a radioactive isotope, which emits a gamma-ray cascade, ~~gamma-rays~~ or by ~~a collision~~ collisions between accelerated particles and a target, caused by the Bremsstrahlung effect. According to ~~quantum mechanics~~ Quantum Mechanics, the gamma-rays produced are entangled, and said entanglement is transferred to the nuclei of the ~~nuclear isomers~~ isomer nuclides. As a result, each isomer of the radioactive product obtained has a half-life, which can vary over time and which is initially ~~higher~~ lower than the theoretical half-life thereof. The inventive device comprises an entangled gamma source and a device for sequentially irradiating one or more samples over a ~~period of time~~ duration, which is determined as a function of the half-life modification to be obtained. The method and device are particularly suitable for medical treatments and chemical engineering applications.

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